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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/658,275	09/08/2000	James C. Solinsky	3826-2	3667

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EXAMINER	
SHARON, AYAL I	
ART UNIT	**PAPER NUMBER**
2123	

DATE MAILED: 02/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/658,275	SOLINSKY, JAMES C.	
	Examiner	Art Unit	
	Ayal I. Sharon	2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 November 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-38 and 40-59* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-38 and 40-59* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 April 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Introduction

1. Claims 1-38 and 40-59 of U.S. Application 09/658,275, originally filed on 09/08/2000, are currently pending. The application claims benefit of provisional application 60/215,762, filed 6/30/2000. Claim 39 has been cancelled. New claims 56-59 have been added.
2. New relevant prior art has been found and applied. This rejection is therefore non-final.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. The following rejections are based on Annex IV of the "Interim Guidelines for Examination of Patent Applications for Subject Matter Eligibility", effective Oct. 26, 2005, and posted on the USPTO official website at the following URL: http://www.uspto.gov/web/offices/pac/dapp/ogsheet.html
5. **Claims 1-38 and 40-59 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.** An invention which is eligible for patenting under 35 U.S.C. § 101 is in the "useful arts" when it is a machine, manufacture, process or composition of matter, which produces a concrete, tangible, and useful result. The fundamental test for patent eligibility is

thus to determine whether the claimed invention produces a "**useful, concrete and tangible result.**" According to p.4 of the Interim Guidelines,

> The claimed invention as a whole must be useful and accomplish a practical application. That is, it must produce a "useful, concrete and tangible result." State Street, 149 F.3d at 1373-74, 47 USPQ2d at 1601-02. The purpose of this requirement is to limit patent protection to inventions that possess a certain level of "real world" value, as opposed to subject matter that represents nothing more than an idea or concept, or is simply a starting point for future investigation or research (Brenner v. Manson, 383 U.S. 519, 528-36, 148 USPQ 689, 693-96 (1966)); In re Fisher, 421 F.3d 1365, 76 USPQ2d 1225 (Fed. Cir. 2005); In re Ziegler, 992 F.2d 1197, 1200-03, 26 USPQ2d 1600, 1603-06 (Fed. Cir. 1993)).

The test for practical application as applied by the examiner involves the determination of the following factors:

a. "**Useful**" - The Supreme Court in *Diamond v. Diehr* requires that the examiner look at the claimed invention as a whole and compare any asserted utility with the claimed invention to determine whether the asserted utility is accomplished. Applying utility case law the examiner will note that:

   3. the utility need not be expressly recited in the claims, rather it may be inferred.

   4. if the utility is not asserted in the written description, then it must be well established.

b. "**Tangible**" - Applying *In re Warmerdam*, 33 F.3d 1354, 31 USPQ2d 1754 (Fed. Cir. 1994), the examiner will determine whether there is simply a mathematical construct claimed, such as a disembodied data structure and method of making it. If so, the claim involves no more than a

manipulation of an abstract idea and therefore, is nonstatutory under 35 U.S.C. § 101. In *Warmerdam* the abstract idea of a data structure became capable of producing a useful result when it was fixed in a tangible medium which enabled its functionality to be realized. See MPEP §2106 (A). See also *Schrader*, 22 F.3d at 295, 30 USPQ2d at 1459.

c. "**Concrete**" - Another consideration is whether the invention produces a "concrete" result. Usually, this question arises when a result cannot be assured. An appropriate rejection under 35 U.S.C. § 101 should be accompanied by a lack of enablement rejection, because the invention cannot operate as intended without undue experimentation.

6. The Examiner respectfully submits that under current PTO practice, the claimed invention does not recite *a concrete, useful, or tangible result*. The results are not useful or tangible because the output signals do not have an identified practical application.

7. **Claim 1-38 and 40-59 are rejected under 35 U.S.C. 101 because the claimed invention is not supported by either a specific and substantial asserted utility or a well established utility.** The claimed invention lacks a concrete, useful and tangible result, and therefore lacks a specific and substantial asserted utility.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

9. **Claim 1-38 and 40-59 are also rejected under 35 U.S.C. 112, first paragraph.** Specifically, since the claimed invention is not supported by either a specific and substantial asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. The prior art used for these rejections is as follows:

12. Austin, J. "Rapid Learning With a Hybrid Neural Network". Neural Network World, No.5, pp.531-549, IDG Communications. 1993. http://ftp.cs.york.ac.uk/arch/NeuralNetworks/publications/UnsortedByYear/045.pdf ("**Austin_045.pdf**").

13. **Claims 1-38 and 40-59 are rejected under 35 U.S.C. 102(b) as being anticipated by Austin_045.pdf.**

14. In regards to Claim 1, Austin_045.pdf teaches the following limitations:

Claim 1 (Currently Amended): A method of generating outputs in response to real world stimulation comprising:

capturing two or more simultaneous user inputs that are responsive to training stimulation;

synthesizing the captured user inputs;

generating a user memory model representation of the synthesized user inputs, the model comprising objects and object links in a partially orthogonal N-dimensional object space; storing the generated model; and

using the stored model to generate output signals in response to real-world stimulation.

(See Austin_045.pdf, especially: pp.4-5, in section "2. N tuple networks")

15. In regards to Claim 2, Austin_045.pdf teaches the following limitations:

Claim 2 (Previously Presented): The method according to claim 1, further comprising:

using a forced choice interaction to generate one or more additional user inputs; capturing the additional user inputs; and

incorporating the additional user inputs into the model.

(See Austin_045.pdf, especially: pp.4-5, in section "2. N tuple networks")

16. In regards to Claim 3, Austin_045.pdf teaches the following limitations:

Claim 3 (Currently Amended): The method according to claim 1, wherein the model comprises a worldline of linked object diagram exemplars.

(See Austin_045.pdf, especially: Fig.2, in section "2. N tuple networks")

17. In regards to Claim 4, Austin_045.pdf teaches the following limitations:

Claim 4 (Previously Presented): The method according to claim 1, wherein the real world stimulation comprises simultaneous user inputs that are compared to the stored model, and
the output signals are based on the results of the comparison.

(See Austin_045.pdf, especially: pp.4-5, in section "2. N tuple networks")

18. In regards to Claim 5, Austin_045.pdf teaches the following limitations:

Claim 5 (Previously Presented): The method according to claim 1, wherein the method is performed at least partly in accordance with computer-executable instructions stored on a computer-readable medium.

(See Austin_045.pdf, especially: pp.4-5, in section "2. N tuple networks")

19. In regards to Claim 6, Austin_045.pdf teaches the following limitations:

Claim 6 (Previously Presented): The method according to claim 1, wherein the method is performed at least partly by a hardware processing engine.

(See Austin_045.pdf, especially: pp.4-5, in section "2. N tuple networks")

20. In regards to Claim 7, Austin_045.pdf teaches the following limitations:

Claim 7 (Previously Presented): The method according to claim 1, wherein the method is performed by at least partly by an application specific integrated circuit.

(See Austin_045.pdf, especially: pp.4-5, in section "2. N tuple networks")

21. In regards to Claim 8, Austin_045.pdf teaches the following limitations:

Claim 8 (Previously Presented): The method according to claim 1, wherein the method is performed at least partly by a netlist integrated into other integrated circuits.

(See Austin_045.pdf, especially: pp.4-5, in section "2. N tuple networks")

22. **Claims 9-16, 17-24, and 25-32 are rejected based on the same reasoning as claims 1-8, *supra*.**

a. Claims 9-16 are method claims that recite the equivalent limitations as are recited in method claims 1-8 and taught throughout Austin_045.pdf. The preamble to Claim 9 recites "control command stimulation" as opposed to the "real world stimulation" of claim 1, however, a "control command stimulation" inherently takes place in the "real world".

b. Claims 17-24 are system claims reciting the equivalent limitations as are recited in method claims 1-8 and taught throughout Austin_045.pdf.

c. Claims 25-32 are system claims reciting the equivalent limitations as are recited in method claims 1-8 and taught throughout Austin_045.pdf. The preamble to Claim 25 recites "control command stimulation" as opposed to

the "real world stimulation" of claim 1, however, a "control command stimulation" inherently takes place in the "real world".

23. In regards to Claim 33, Austin_045.pdf teaches the following limitations:

Claim 33 (Currently Amended): A method of generating outputs in response to real world stimulation comprising:

capturing two or more simultaneous user inputs that are responsive to training stimulation;

synthesizing the captured user inputs through a dynamic, user memory model-based response generation from the captured user inputs with correlated congruence to two or more data input channels;

storing the model representation of the synthesis generation as mapped into a partially orthogonal N-dimensional representation; and

using the stored model to generate output signals in response to real world stimulation through temporally sensitive similarity matching.

(See Austin_045.pdf, especially: pp.4-5, in section "2. N tuple networks")

24. In regards to Claim 34, Austin_045.pdf teaches the following limitations:

Claim 34 (Previously Presented): The method according to claim 33, further comprising:

using a forced choice interaction of dynamic temporal events to generate one or more additional simultaneous user inputs, which are physically/mentally linked pattern responses;

capturing the additional user inputs; and

incorporating the additional user inputs into the model.

(See Austin_045.pdf, especially: pp.4-5, in section "2. N tuple networks")

25. In regards to Claim 35, Austin_045.pdf teaches the following limitations:

Claim 35 (Currently Amended): A method of generating outputs in response to real world stimulation comprising:

receiving two or more simultaneous inputs supplied by a user in response to training stimulation;

generating a model comprising objects and object links in a partially orthogonal [[an]] N-dimensional object space, the model representing a synthesis of the simultaneous user inputs

mapping the N-dimensional object space to one or more M-dimensional sub-spaces to compare the model representing the synthesis of the simultaneous user inputs to subsequently received simultaneous user inputs; and

generating output signals in response to the comparing.

(See Austin_045.pdf, especially: pp.4-5, in section "2. N tuple networks")

26. In regards to Claim 36, Austin_045.pdf teaches the following limitations:

Claim 36 (Previously Presented): A method of generating outputs in response to real world stimulation comprising:

receiving two or more simultaneous inputs supplied by a user in response to training stimulation;

generating a model comprising objects and object links in an N-dimensional object space, the model representing a synthesis of the simultaneous user inputs, wherein the objects the object-space include objects of two or more different object classes

mapping the N-dimensional object space to one or more M-dimensional sub-spaces to compare the model representing the synthesis of the simultaneous user inputs to subsequently received simultaneous user inputs; and

generating output signals in response to the comparing.

(See Austin_045.pdf, especially: pp.4-5, in section "2. N tuple networks")

27. In regards to Claim 37, Austin_045.pdf teaches the following limitations:

Claim 37 (Previously Presented): The method according to claim 36, wherein the object links comprise worldlines each connecting the objects of a respective one of the different classes.

(See Austin_045.pdf, especially: pp.4-5, in section "2. N tuple networks")

28. In regards to Claim 38, Austin_045.pdf teaches the following limitations:

Claim 38 (Previously Presented): The method according to claim 36, wherein the different object classes correspond to different user training sessions.

29. Claim 39 is cancelled.

30. In regards to Claim 40, Austin_045.pdf teaches the following limitations:

Claim 40 (Previously Presented): The method according to claim 35, wherein N>3.

(See Austin_045.pdf, especially: pp.4-5, in section "2. N tuple networks")

31. In regards to Claim 41, Austin_045.pdf teaches the following limitations:

Claim 41. (Previously Presented): The method according to claim 35, wherein the N-dimensional space is mapped to the one or more M-dimensional sub-spaces using subspace projection operators.

(See Austin_045.pdf, especially: pp.4-5, in section "2. N tuple networks")

32. In regards to Claim 42, Austin_045.pdf teaches the following limitations:

Claim 42 (Previously Presented): The method according to claim 41, wherein the subspace projection operators project densities to the M-dimensional space.

(See Austin_045.pdf, especially: pp.4-5, in section "2. N tuple networks")

33. In regards to Claim 43, Austin_045.pdf teaches the following limitations:

Claim 43 (Previously Presented): The method according to china 42, wherein the subspace projection operators project the densities onto axes of the object space model.

(See Austin_045.pdf, especially: pp.4-5, in section "2. N tuple networks")

34. In regards to Claim 44, Austin_045.pdf teaches the following limitations:

Claim 44 (Previously Presented): The method according to claim 42, wherein the subspace projection operators include subspace projection operators for obtaining attribute densities.

(See Austin_045.pdf, especially: pp.4-5, in section "2. N tuple networks")

35. In regards to Claim 45, Austin_045.pdf teaches the following limitations:

Claim 45 (Previously Presented): The method according to claim 42, wherein the subspace projection operators include subspace projection operators for obtaining object link densities.

(See Austin_045.pdf, especially: pp.4-5, in section "2. N tuple networks")

36. In regards to Claim 46, Austin_045.pdf teaches the following limitations:

Claim 46 (Previously Presented): The method according to claim 35, wherein the object links comprise a worldline connecting the objects.

(See Austin_045.pdf, especially: pp.4-5, in section "2. N tuple networks")

37. In regards to Claim 47, Austin_045.pdf teaches the following limitations:

Claim 47 (Previously Presented): The method according to chino 35, wherein the subsequently received simultaneous user inputs are provided in response to a forced choice interaction with the user.

(See Austin_045.pdf, especially: pp.4-5, in section "2. N tuple networks")

38. Claims 48-51 are rejected for the same reasons as claims 5-8 are rejected above.

39. **Claim 52 is rejected based on the same reasoning as claim 35.**

40. In regards to Claim 53, Austin_045.pdf teaches the following limitations:

Claim 53 (New): The method according to claim 35, wherein the output signals comprise display signals.

(See Austin_045.pdf, especially: pp.4-5, in section "2. N tuple networks")

41. In regards to Claim 54, Austin_045.pdf teaches the following limitations:

Claim 54 (New): The method according to claim 35, wherein the output signals comprise control signals.

(See Austin_045.pdf, especially: pp.4-5, in section "2. N tuple networks")

42. **Claims 55-56 are rejected based on the same reasoning as claims 53-54.**

43. In regards to Claim 57, Austin_045.pdf teaches the following limitations:

Claim 57 (New):A system for generating outputs in response to real world stimulation comprising:

inputs for receiving two or more simultaneous inputs supplied by a user in response to training stimulation;

storage for storing a model comprising objects and object links in an N-dimensional object space, the model representing a synthesis of the simultaneous user inputs, wherein the objects include objects of two or more different object classes;

a processing system for mapping the N-dimensional object space to one or more M-dimensional sub-spaces to compare the model representing the synthesis of the simultaneous user inputs to subsequently received simultaneous user inputs; and

outputs for outputting output signals based on the comparing.

(See Austin_045.pdf, especially: pp.4-5, in section "2. N tuple networks")

Examiner interprets that the "Coupling the MLN and N tuple networks" taught at pages 4-5 correspond to the claimed N-to-M dimensional space conversions.

44. In regards to Claim 58, Austin_045.pdf teaches the following limitations:

Claim 58 (New):The system according to claim 57, wherein the output signals comprise display signals.

(See Austin_045.pdf, especially: pp.4-5, in section "2. N tuple networks")

45. In regards to Claim 59, Austin_045.pdf teaches the following limitations:

Claim 59 (New):The system according to claim 57, wherein the output signals comprise control signals.

(See Austin_045.pdf, especially: pp.4-5, in section "2. N tuple networks")

Conclusion

46. The following prior art, made of record and not relied upon, is considered pertinent to applicant's disclosure.

47. Examiner notes that according to "The University of York Advanced Computer Architecture Group - Neural Networks - Research Papers" at http://ftp.cs.york.ac.uk/arch/NeuralNetworks/references, there is another version of the cited Austin_045.pdf paper at the following URL: http://ftp.cs.york.ac.uk/arch/NeuralNetworks/publications/1993/005.pdf. Examiner calls this version the "Austin_005.pdf" reference. The Austin_005.pdf reference contains additional relevant teachings at pp.4,5, and 15. (These additional teachings are not taught in the Austin_045.pdf reference).

48. Lienhardt, P. "Subdivisions of n-dimensional spaces, and n-dimensional generalized maps." Proc. of the 5th Annual Symposium on Computational Geometry. 1989. pp.228-236. (Teaches n-dimensional geometry.)

Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ayal I. Sharon whose telephone number is

(571) 272-3714. The examiner can normally be reached on Monday through Thursday, and the first Friday of a bi-week, 8:30 am – 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard can be reached at (571) 272-3749.

Any response to this office action should be faxed to (571) 273-8300, or mailed to:

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or hand carried to:

USPTO
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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Tech Center 2100 Receptionist, whose telephone number is (571) 272-2100.

Ayal I. Sharon
Art Unit 2123
February 6, 2006

Paul L. Rodriguez 2/6/06
Primary Examiner
Art Unit 2125